

CDN Resource Laboratories Ltd.

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REFERENCE MATERIAL: CDN-GS-1Z

Recommended value and the "Between Laboratory" two standard deviations

Gold	1.155 g/t ± 0.095 g/t	Certified value	30g, FA / Instrumental
Silver	89.5 g/t ± 4.4 g/t	Certified value	4 Acid / Instrumental

PREPARED BY: CDN Resource Laboratories Ltd.
CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia
INDEPENDENT GEOCHEMIST: Dr. Barry Smee, PhD, P Geo
DATE OF CERTIFICATION: June 27th, 2019

ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-1Z was prepared by combining 4000 kg of a low-grade Au, Cu ore blended with 40 kg of high-grade gold ore supplied by Teuton Resources from their Clone gold property in B.C., Canada and blended with 45 kg of ore provided by Hecla Green Creek property.

Low-grade Au, Cu ore was provided from a copper gold porphyry project, located in south-central British Columbia. The deposit represents a large regional depositional belt commonly dominated by alkalic volcanic units and related volcanoclastic lithologies and hosts both alkaline and calc-alkaline porphyry copper+/-gold+/-molybdenum deposits.

In this large regional depositional belt alkali-porphyry deposits typically are hosted in basalts and andesitic flows, fragmental rocks and alkalic intrusive complexes. They are generally mineralized with gold and copper and do not have large quantities of pyrite. Sulfide mineralization is developed adjacent to and within concentrically-zoned alkalic plutons.

Mineralization of Clone gold property is localized within highly silicified semi-massive to massive specular hematite. Gold occurs as fine disseminations and is associated with the oxide mineralization. The major lithology is light grey to green andesitic pyroclastic intercalated with fine grained to aphanitic andesite.

The Greens Creek deposit is a polymetallic, stratiform, massive sulfide deposit. The host rock consists of predominantly marine sedimentary, and mafic to ultramafic volcanic and plutonic rocks, which have been subjected to multiple periods of deformation. Mineralization occurs discontinuously along the contact between a structural hanging wall of quartz mica carbonate phyllites, and a structural footwall of graphitic and calcareous argillite.

METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270-mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a blender. Splits were taken and sent to 15 commercial laboratories for round robin assaying.

ASSAY PROCEDURES:

Au: 30 gr Fire assay pre-concentration, Instrumental finish.
Ag: 4 Acid Digestion with Instrumental finish.

Whole rock analysis and 30 element ICP analysis (4-acid digestion) were also conducted on 10 samples.

APPROXIMATE CHEMICAL COMPOSITION (by whole rock analysis):

	Percent		Percent
SiO ₂	53.8	Na ₂ O	3.0
Al ₂ O ₃	16	MgO	3.3
Fe ₂ O ₃	6.6	K ₂ O	1.9
CaO	7.5	TiO ₂	0.6
MnO	<0.2	LOI	5.9
Total S	1.0	Total C	1.0

STATISTICAL PROCEDURES:

The final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was removed from further calculations when the mean of all analyses from that laboratory failed a t test of the global means of the other laboratories. The mean and standard deviation were calculated using all remaining data. Any analysis that fell outside of the mean ± 2 standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data. This method is different from that used by Government agencies in that the actual "between-laboratory" standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

Our certified gold values are based on 30 g Fire Assay determinations. For optimal results, we strongly recommend you assay our standards with similar methods using "at least" 30 g of material. Using a smaller sample weight may result in erratic values.

RESULTS FROM ROUND ROBIN ASSAYING:

Sample	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
	Au (g/t) by Fire Assay, 30g sample size and Instrumental finish														
GS-1Z-1	1.125	1.200	1.200	1.080	1.190	1.18	1.194	1.121	1.145	1.225	1.144	1.206	1.12	1.142	1.150
GS-1Z-2	1.100	1.120	1.135	1.095	1.180	1.19	1.193	1.145	1.150	1.301	1.225	1.184	1.15	1.245	1.190
GS-1Z-3	1.220	1.120	1.170	1.180	1.205	1.19	1.227	1.139	1.136	1.182	1.229	1.146	1.06	1.176	1.100
GS-1Z-4	1.180	1.105	1.260	1.140	1.110	1.20	1.223	1.118	1.102	1.234	1.139	1.135	1.06	1.136	1.135
GS-1Z-5	1.140	1.175	1.220	1.090	1.165	1.18	1.139	1.147	1.107	1.297	1.127	1.103	1.19	1.262	1.140
GS-1Z-6	1.250	1.090	1.125	1.140	1.255	1.19	1.200	1.136	1.106	1.290	1.151	1.130	1.11	1.230	1.150
GS-1Z-7	1.145	1.190	1.060	1.090	1.135	1.18	1.171	1.157	1.086	1.251	1.221	1.140	1.14	1.240	1.160
GS-1Z-8	1.180	1.110	1.160	1.105	1.200	1.22	1.104	1.133	1.109	1.176	1.124	1.182	1.15	1.249	1.105
GS-1Z-9	1.120	1.195	1.045	1.080	1.155	1.17	1.140	1.140	1.100	1.239	1.137	1.161	1.24	1.143	1.180
GS-1Z-10	1.165	1.215	1.205	1.110	1.125	1.20	1.167	1.126	1.128	1.214	1.221	1.073	1.18	1.215	1.185
GS-1Z-11	1.195	1.195	1.115	1.105	1.135	1.13	1.190	1.154	1.083	1.239	1.181	1.112	1.19	1.177	1.115
GS-1Z-12	1.060	1.130	1.035	1.080	1.130	1.23	1.068	1.135	1.086	1.181	1.201	1.173	1.14	1.169	1.100
GS-1Z-13	1.160	1.235	1.175	1.120	1.145	1.18	1.166	1.134	1.099	1.227	1.223	1.159	1.10	1.200	1.125
GS-1Z-14	1.295	1.355	1.195	1.090	1.120	1.17	1.178	1.137	1.118	1.201	1.209	1.111	1.06	1.175	1.085
GS-1Z-15	1.160	1.115	1.055	1.080	1.145	1.19	1.157	1.161	1.088	1.189	1.149	1.258	1.12	1.088	1.090
Mean	1.166	1.170	1.144	1.106	1.160	1.19	1.168	1.139	1.110	1.230	1.179	1.152	1.13	1.190	1.134
Std. Devn.	0.059	0.069	0.070	0.029	0.040	0.023	0.042	0.012	0.022	0.042	0.041	0.046	0.053	0.050	0.035
% RSD	5.04	5.91	6.12	2.60	3.41	1.93	3.64	1.09	1.95	3.38	3.47	3.99	4.64	4.23	3.07

Ag (g/t) by 4 Acid digestion /Instrumental finish															
GS-1Z-1	89	86	95	91	89	89.0	90	82.2	87	89.0	90.6	91	95	93.0	92
GS-1Z-2	90	89	95	91	89	90.0	90	82.6	89	90.8	90.3	88	99	94.9	87
GS-1Z-3	90	88	96	90	87	90.5	89	82.1	85	88.4	89.3	88	97	95.4	89
GS-1Z-4	90	88	96	90	85	92.5	89	82.2	86	86.9	90.6	90	96	93.9	88
GS-1Z-5	93	87	91	88	89	92.5	86	82.6	86	88.9	89.1	88	93	96.8	91
GS-1Z-6	90	88	93	91	89	92.0	87	81.9	89	86.4	88.8	87	96	94.5	90
GS-1Z-7	91	88	93	90	90	91.5	89	82.0	89	87.5	88.5	91	94	93.5	89
GS-1Z-8	91	88	91	89	90	92.0	88	82.2	90	85.4	88.7	89	98	94.7	91
GS-1Z-9	92	87	94	89	86	91.0	88	82.0	88	88.8	90.3	87	97	97.6	89
GS-1Z-10	89	87	93	90	87	91.0	90	82.1	86	88.1	89.4	89	99	95.1	89
GS-1Z-11	90	87	88	91	84	91.5	88	82.2	87	84.7	88.4	86	93	94.1	89
GS-1Z-12	89	89	90	93	85	89.5	89	82.6	88	88.9	90.4	88	99	96.8	90
GS-1Z-13	92	88	94	94	86	91.5	89	82.5	89	89.2	89.9	90	96	94.8	91
GS-1Z-14	91	90	94	89	90	89.5	87	82.1	89	88.8	87.6	89	95	95.6	90
GS-1Z-15	90	89	94	90	91	90.5	88	82.5	86	87.2	89.7	91	98	95.0	89
Mean	90	88	93	90	88	91.0	88	82.3	88	87.9	89.4	89	96	95.0	90
Std. Devn.	1.187	1.033	2.264	1.549	2.210	1.109	1.187	0.242	1.549	1.594	0.919	1.568	2.059	1.265	1.298
% RSD	1.31	1.17	2.43	1.71	2.52	1.22	1.34	0.29	1.77	1.81	1.03	1.77	2.14	1.33	1.45

****Note: Ag results from Lab. 8 and 13 were removed for failing the t test.**

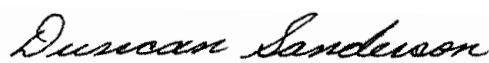
PARTICIPATING LABORATORIES: (not in same order as table of assays)

ALS Santiago, Chile	Certimin S.A., Lima, Peru
ALS Reno, Nevada, USA	SGS, Lima, Peru
ALS Canada, North Vancouver, BC, Canada	SGS, Lakefield, Ontario, Canada
ALS, Loughrea, Ireland	SGS, Vancouver, BC, Canada
ALS, Lima, Peru	Skyline Assayers & Laboratories, AZ, USA
ALS, Perth, Australia	MS Analytical, Langley, BC, Canada
Bureau Veritas, Perth, Australia	TSL Laboratories Ltd., Saskatoon, SK, Canada
Bureau Veritas, Vancouver, BC, Canada	

LEGAL NOTICE:

This certificate and the reference material described in it have been prepared with due care and attention. However, CDN Resource Laboratories Ltd. nor Barry Smee accept any liability for any decisions or actions taken following the use of the reference material. Our liability is limited solely to the cost of the reference material.

Certified by



Duncan Sanderson, Certified Assayer of B.C.

Geochemist



Dr. Barry Smee, Ph.D., P. Geo.